

Decisional balance, self-efficacy and its association to the exercise enjoyment in Mexican population

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EL BALANCE DECISIONAL, LA AUTOEFICACIA Y SU ASOCIACIÓN CON EL DISFRUTE CON EL EJERCICIO EN POBLACIÓN MEXICANA

KEYWORDS: Decisional balance, self-efficacy, enjoyment, adherence, exercise.

ABSTRACT: Physical activity practice is a classic behaviour of the healthy lifestyle. Nonetheless, it is difficult for general population to have this behaviour among their habits. From the decision-making model, decisional balance has been identified as a relevant process in relation to doing physical activity. On the other hand, self-efficacy has been pointed out as a key point in relation to practice, adherence and enjoyment in physical activity. The aim of this study was to examine decisional balance and self-efficacy as a predictor of exercise enjoyment in a sample of 530 participants (48.2% male) between the ages of 11 and 76 ($M = 33.22$; $SD = 15.27$) from Monterrey (Mexico). Hierarchical regression analysis was conducted to predict exercise enjoyment. Results showed that decisional balance and self-efficacy predicted enjoyment, additionally, self-efficacy played a mediational role between decisional balance and enjoyment.

The practice of physical activity (PA) has been frequently pointed out as a key variable related to health promotion and disease prevention and treatment (e.g., Bangsbo et al., 2016; WHO, 2010). However, population data around the world show a prevalence of insufficient physical activity compared to recommended practice (e.g., Centers for Disease Control and Prevention, 2011; WHO, 2010).

For sedentary people, modifying sedentary behaviors entails an effort as they move toward a physically active lifestyle. In many cases, these changes in habits face barriers that make the adoption of healthy lifestyles a difficult endeavor (Velicer, DiClemente, Prochaska and Brandenburg, 1985). The decision-making model (Janis and Mann, 1977) has been used as an approach to the change of habits in people, including decisional balance to evaluate the benefits (pros) and disadvantages (cons) of one's behavior and others'; these

authors suggest that a positive balance in favor of the advantages of doing physical exercise could be a key aspect of the final decision to engage to exercise.

On the other hand, self-efficacy, understood as the confidence an individual has in their ability to meet a goal (Bandura, 1977), has been associated with decisional balance to explain involvement in PA (Bandura, 1977; Marcus and Owen, 1992; Marcus, Eaton, Rossi and Harlow, 1994; Pinto, Clark, Cruess, Szymanski and Pera, 1999). Therefore, the degree of belief a person has in their capabilities to undertake a behavior will be positively related with their intention to carry out such behavior and adopt it (Bandura, 1977). Additionally, it has been pointed out that PA is affected by the strength of the personal belief in that exercise can be regulated despite numerous obstacles (Bandura, 1997). Besides the aforementioned intentional-cognitive components, literature has pondered

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affective variables such as enjoyment, defined as a positive affective state reflecting feelings such as pleasure, joy, and fun (Wankel, 1993). Enjoyment has frequently been associated with adherence to the practice of PA (Hu, Mcauley, Motl, Mcauley and Konopack, 2007). For instance, in the educational context, adults and adolescents reported higher levels of engagement with PA in their leisure time when they enjoyed their physical education lessons (Cox, Stimpson, Poole and Lambur, 2003; Schneider and Cooper, 2011).

In short, three variables relevant to commitment to the practice of PA have been identified: decisional balance, self-efficacy, and enjoyment. As far as we know, previous researches didn't relate these three variables in a single study. Thus, the aim of the present study was to evaluate decisional balance and self-efficacy as a predictor of exercise enjoyment.

Method

Participants

The study included 530 participants, selected using an intentional non-probabilistic sampling method; 48.2% of participants were men and 51.8% were women, aged between 11 and 76 ($M = 33.22$; $SD = 15.22$), from the city of Monterrey (Mexico) and its metropolitan area.

Instruments

The participants' perceptions about the pros and cons of physical activity was measured with the Decisional Balance Scale for Exercise (DBS-E, Marcus, Rakowski and Rossi, 1992), adapted to Mexico by Zamarripa, Hernández-Soto and Hernández-Cruz (2016). The instrument consists of 16 response items, 10 of them reflecting advantages (pros) and six reflecting disadvantages (cons) of carrying out physical activity. An example of the pros subscale is: 'Regular exercise would help me relieve tension'; an example of the cons subscale is 'Regular exercise would take too much of my time'. Responses are arranged on a Likert-type scale from 1 (not important) to 5 (very important). Once the response items corresponding to each factor are grouped, decisional balance is calculated by subtracting the cons factor mean score from the pros factor mean score.

Self-efficacy was assessed using the Mexican version (Delgado, Zamarripa, De la Cruz, Cantú and Álvarez (in press) of Marcus, Selby, Niaura, and Rossi's five-item brief self-efficacy questionnaire (1992). The scale initiates with the following sentence: Circle the number indicating how confident

you are at initiating physical activity in each of the following situations, for instance: When I am tired. Responses are arranged on a Likert-type scale from 0 (not confident at all) to 5 (extremely confident).

Enjoyment with physical activity was measured using an adapted version of the Physical Activity Enjoyment Scale (PACES, Kendzierski and DeCarlo, 1991). This semantic differential scale is composed of 18 pairs of opposite adjectives (polar adjectives). Participants are asked to indicate their position along a seven-point scale between the pair of words. An example item is: 'I enjoy it' vs 'I hate it'. A high score in the scale indicates that the respondent takes great enjoyment in PA.

Procedure

The instrument was administered at the participant's home by previously trained staff during face-to-face interviews. Participation was voluntary, and all participants were informed about the objective of the study and guaranteed the confidentiality and anonymity of their responses. Only people who provided informed consent were considered in the study.

Data analysis

We used the SPSS (IBM®, Armonk, NY) statistical software, version 21.0 for Windows, to calculate the internal consistency of the instruments and to run descriptive statistics, correlations, and hierarchical regression analyses.

Results

Descriptive analyses, reliability, and correlations

The internal reliability coefficients of all scales were satisfactory with alphas range between .80 and .94 (see Table 1). As shown in Table 1, values for decisional balance, self-efficacy and enjoyment were above the mean value of the scale. All the study variables were significantly correlated in the expected direction (see Table 1).

In order to analyze the predictive power of decisional balance on exercise enjoyment, as well as the mediating role of self-efficacy between these two variables, a hierarchical regression analysis was carried out. Decisional balance was entered in step 1, followed by self-efficacy in step 2. Results indicated that exercise enjoyment was positively predicted by decisional balance accounted for 28% of exercise enjoyment variance. Self-efficacy was a positive predictor of exercise enjoyment, accounted for an additional 6% of variance. These variables accounted for 34% of the exercise enjoyment variance. In addition, our results showed that self-efficacy partially

mediated the relationship between decisional balance and exercise enjoyment (\square dropped from .52 to .43, $p < .01$) (see Table 2).

Discussion

The aim of the present study was to examine the predictive power of decisional balance and self-efficacy on exercise enjoyment in a sample of residents from the city of Monterrey (Mexico) and its metropolitan area. The descriptive results of the study portray people who perceive PA as something positive and desirable; also, participants considered themselves moderately effective at practicing PA and reported enjoying exercising. Previous research has highlighted the desirability of helping people to focus on the benefits of PA (Marcus and Forsyth, 2009), since decisional balance is considered a key element in people’s decision to perform a behavior (Janis and Mann, 1977); it is also an important antecedent to an adequate level of self-efficacy when performing PA, which can be helpful to overcome barriers to engaging in PA (Bandura, 1997). Self-efficacy has been identified as the most important factor in behavioral change (Marcus and Forsyth, 2009), and it is a strong

predictor of physical exercise behaviors. Hu, Motl, McAuley and Konopack (2007) suggested that self-efficacy interventions may improve significantly the enjoyment of exercise. Furthermore, Steeves et al. (2016) pointed out that the more self efficacy and exercise enjoyment with exercise, the less barriers to perform PA in a sample of overweight adults.

The present study provides empirical evidence of the role of decisional balance as a forerunner of enjoyment and of the role of self-efficacy as an amplifier of the effects of decisional balance on this relation.

Nevertheless, the results of this study have to be interpreted with caution due to the nature of the sample, age variability and other sociodemographic variables which may be considered to deepen in the studied relations (i.e. PA level, years of practice). These aspects would be interesting to understand nuances in relation to the variables studied.

To conclude, and in the light of the results of this study, we suggest to reinforce the advantages of PA, and to potentiate people’s self-efficacy perceptions as a strategy to increase enjoyment and improve adherence to the practice of PA.

Variable	Min	Max	<i>M</i>	<i>SD</i>	α	1	2	3
Pros	1.00	5.00	3.58	.82	.91			
Cons	1.00	5.00	2.80	.81	.80			
1. Decisional balance	-3.00	4.00	.77	1.17	-	1		
2. Self-efficacy	1.00	5.00	2.59	.95	.81	.33**	1	
3. Enjoyment	1.00	7.00	4.75	1.22	.94	.53**	.41**	1

** $p < .01$

Table 1. Descriptives, internal consistency and bivariate correlations among the study variables

Predictor variables	<i>b</i>	<i>SE b</i>	\square	<i>t</i>	<i>R</i> ²
Step 1					.28**
Decisional balance	.55	.04	.52	14.15**	
Step 2					.34**
Decisional balance	.45	.04	.43	11.59**	
Self-efficacy	.34	.05	.27	7.20**	

Note. *b* = unstandardised regression coefficient, *SE* = Standard error, β = Standardised regression coefficient, *t* = obtained *t* value, *R*² = proportion variance explained. ** $p < .01$

Table 2. Hierarchical regression analysis examining the effects of decisional balance and self-efficacy in predicting enjoyment

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PALABRAS CLAVE: Balance decisional, autoeficacia, disfrute, adherencia, ejercicio.

RESUMEN: La práctica de actividad física es considerada una conducta clásica de los estilos de vida saludable. A pesar de ello, sigue habiendo dificultades para que la población general adquiera esta conducta entre sus hábitos. Desde el modelo de toma de decisiones, el balance decisional se ha identificado como un proceso relevante para la realización de actividad física. Por otro lado, la autoeficacia ha sido señalada como un aspecto clave para la práctica, adherencia y disfrute de la actividad física. El propósito del presente estudio fue examinar el rol predictor del balance decisional y la autoeficacia en el disfrute del ejercicio en una muestra de 530 personas (48.2% hombres) cuyas edades se encontraban entre los 11 y 76 años ($M = 33.22$; $DT = 15.27$) de Monterrey (México). Se realizaron análisis de regresión jerárquica para predecir el disfrute con el ejercicio. Los resultados indican que el balance decisional y la autoeficacia predicen el disfrute con el ejercicio, con un papel mediador de la autoeficacia entre el balance decisional y el disfrute.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.
- Bangsbo, J., Krstrup, P., Duda, J., Hillman, C., Andersen, L. B., Weiss, M., ... Elbe, A.-M. (2016). The Copenhagen Consensus Conference 2016: children, youth, and physical activity in schools and during leisure time. *British Journal of Sports Medicine*. doi:10.1136/bjsports-2016-096325
- Centers for Disease Control and Prevention (2011). *Strategies to prevent obesity and other chronic diseases: The CDC guide to strategies to increase physical activity in the community*. Atlanta: U.S. Department of Health and Human Services. Retrieved from http://www.cdc.gov/obesity/downloads/PA_2011_WEB.pdf
- Cox, R., Stimpson, T., Poole, K. and Lambur, M. (2003). Physical activity characteristics of potential participants in nutrition and fitness programs based on stages of change, self-efficacy, and decisional balance. *Family and Consumer Sciences Research Journal*, 31(4), 361–377. doi:10.1177/1077727X03251077
- Delgado, M., Zamarripa, J., De la Cruz, M., Cantú, A. and Álvarez, O. (in press). Validation of the Mexican versión fo the self-efficacy questionnaire for exercise. *Revista de Psicología del Deporte*.
- Hu, L., Mcauley, E., Motl, R., Mcauley, E. and Konopack, J. (2007). Effects of self-efficacy on physical activity enjoyment in college-aged women. *International Journal of Behavioral Medicine*, 14(2), 92–96. doi:10.1007/BF03004174
- Janis, I. and Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice, and commitment*. NY: Collier MacMillan.
- Kendzierski, D. and DeCarlo, K. (1991). Physical activity enjoyment scale: Two validation studies. *Journal of Sport and Exercise Psychology*, 13(1), 50-64.
- Marcus, B. and Forsyth, L. (2009). *Motivating people to be physically active* (2nd ed.). United States of America: Human Kinetics.
- Marcus, B., Eaton, C. A., Rossi, J. S. and Harlow, L. L. (1994). Self-efficacy, decision-making, and stages of change: An integrative model of physical exercise. *Journal of Applied Social Psychology*, 24(69), 489-508. doi: 10.1111/j.1559-1816.1994.tb00595.x
- Marcus, B. and Owen, N. (1992). Motivational readiness, self-efficacy and decision-making for exercise. *Journal of Applied Social Psychology*, 22(1), 3–16.
- Marcus, B. H., Rakowski, W. and Rossi, J. S. (1992). Assessing motivational readiness and decision making for exercise. *Health Psychology*, 11(4), 257-261.
- Marcus, B. H., Selby, V. C., Niaura, R. S. and Rossi, J. S. (1992). Self-efficacy and the stges of exercise behavior change. *Research Quarterly for Exercise and Sport*, 63, 60-66.
- Pinto, B., Clark, M., Cruess, D., Szymanski, L. and Pera, V. (1999). Changes in self-efficacy and decisional balance for exercise among obese women in a weight management program. *Obesity Research*, 7(3), 288–292. doi:10.1002/j.1550-8528.1999.tb00408.x
- Schneider, M. and Cooper, D. (2011). Enjoyment of exercise moderates the impact of a school-based physical activity intervention. *International Journal of Behavioral Nutrition and Physical Activity*, 8(64), 1–8.
- Steeves, J., Bassett, D., Fitzhugh, E., Raynor, H., Cho, C. and Thompson, D. (2016). Physical activity and tv, exercise sel-efficacy, and barriers to being active in overweight adults. *Journal of Physical Activity and Health*, 13, 385-391.
- Velicer, W., DiClemente, C., Prochaska, J. and Brandenburg, N. (1985). Decisional balance measure for assessing and predicting smoking status. *Journal of Personality and Social Psychology*, 48(5), 1279–1289.
- Wankel, L. (1993). The importance of enjoyment to adherence and psychological benefits form physical activity. *International Journal of Sport Psychology*, 24(2), 151-169.
- WHO (2010). *Global recommendations on physical activity for health*. Switzerland: WHO. Retrieved from: http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf
- Zamarripa, J., Hernández-Soto, C. and Hernández-Cruz, G. (2016). Mexican validation of the decisional balance scale for exercise. *Retos. Nuevas tendencias en Educación Física, Deporte y Recreación*, 30, 101-105.